Around 250 masks are needed to form each leg and another 750 for the seat | Photo source Haneul Kim

PLASTIC STOOLS MADE FROM DISCARDED FACE MASKS

ARCHITECTURE & DESIGN

A design student from Kaywon University has collected thousands of used face masks from campus and devised a way to recycle them to create colourful stools

Spotted: Not only has the COVID-19 pandemic brought with it a huge socio-economic crisis, but it has also caused tremendous environmental damage. Every month, we go through 129 billion single-use face masks, with the UN estimating that 75 per cent of these end up in landfills or waterways. In an effort to draw attention to this problem, South Korean designer Haneul Kim is collecting thousands of used disposable face masks from his university campus in Uiwang and upcycling them to create a stackable stool. Called Stack and Stack, Kim hopes that the project will set an example for how face masks can be diverted from polluting our oceans and landfills.

Kim set up mask collection boxes on the Kaywon University campus and emptied them periodically. To reduce the risk of virus transmission, he would quarantine them over a period of a few days and then remove the metal wire and cotton ear loops. This left the polypropylene filter surrounded in a non-woven plastic fabric, which he would then put in a mould and melt at a temperature of more than 300 degrees Celsius with a heat gun. The material eventually built up to create a sturdy stool design, with around 250 masks needed to form each leg and another 750 for the seat. No added materials were needed to hold the liquefied masks together, they simply cooled and hardened into a durable plastic. Even the vibrant colours were a result of the original colours of the PPE, with no added dyes or paints.

With more than 300 million tonnes of plastic produced annually, the fight to reduce plastic pollution is more urgent than ever. Many innovations to reduce and reuse plastics have been sprouting and Springwise has recently spotted a bioplastic face shield made from food waste, and public furniture constructed from plastic waste found in the Shing Mun River in Hong Kong.

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Takeaway:

Before the COVID-19 pandemic, huge strides in the reduction of single-use plastics had been made. However, now that face masks have become mandatory in countries across the world, global sales of disposable face-coverings increased by more than 200 times in 2020, with billions of these tossed away every month. As roadside recycling programmes are not equipped to recycle PPE, projects like Kim's Stack and Stack are important in drawing attention to how used face masks can be diverted from landfills and waterways, as well as urging governments and companies to do more.